hattan sixty years ago. The inference is natural that the conditions of soil and climate then and there were similar to those found in Pompton and West Milford now; though this conclusion must not be stressed, because all of these species have powers of adaptability and endurance.

A few excursions have been made into the town of Warwick in Orange County, New York, along the hills to the east of Greenwood Lake. Two interesting discoveries have been made. One is that of *Lysias Hookeriana*, previously reported from Westchester and Delaware Counties, New York, and from Sussex County, New Jersey, but not from the intervening territory. There is a small colony, near the lake level and not far from the highway, in an open wood. The other species, not observed as yet in Passaic County, is *Gymnadeniopsis clavellata*, which is infrequent in a big swamp high on the hill, in which the great rhododendrom is the chief inhabitant. In the same swamp were noticed a few starved plants of *Malaxis unifolia*.

Part of the territory in Passaic County is soon to be flooded, because of the building of a dam, to conserve the water supply for cities. Wood-cutters are doing their part, necessary but regrettable, in modifying if not destroying plant growth. Many species, even of orchids, are tolerant for years of changed conditions, but cannot survive ultimately any radical alterations of their environment. Now is the time to secure proofs, in specimens and films, of the presence, as yet, in our Local Area, of many interesting and vanishing species.

Chelsea Square, New York City.

## CONCERNING SOME SPECIES OF MACHAERANTHERA

Geo. E. Osterhout

A perplexing group of plants is comprised in the genus Machaeranthera. I suppose they have been something of a puzzle to most of those who have studied them. Many of the species seem to be closely related; and whether they are distinct species, I think is a matter of individual opinion. After a study of a number of the species occurring in Colorado I have arranged them in the following order.

I

Bracts linear, reflexed. Inflorescense viscid.

A. Green tips longer than the lower portion

1. Plants 2 dm. or more high.

M. aspera Greene
M. varians Greene
M. sessiliflora (Nutt.) Greene
(Dieteria sessiliflora Nutt.)
M. rubricaulis Rydb.

2. Plants low, 1 dm. or less high.

M. Pattersonii (Gray) Greene
M. coloradensis (Gray) nom. nov.
(Eriocarpum coloradensis (Gray) Greene)
(Xylorrhiza coloradensis (Gray) Rydb.)

B. Green tips not longer than the lower portion

M. spectabilis Greene
M. Selbyi Rydb.
M. viscosula Rydb.

II

Bracts shorter; not reflexed.

1. Plants canescent.

M. canescens (Pursh) Gray
M. superba A. Nelson

2. Plants less canescent.

M. pulverulenta (Nutt.) Greene
M. divaricata (Nutt.) Greene
M. subalpina Greene
M. ramosa A. Nelson
M. glabella Greene

I

*M. aspera* and *M. varians* Greene are very much alike. *M. aspera* is more hirsute on the stem; and it is the older described species. They do not differ in size.

*M. sessiliflora* (Nutt.) Greene and *M. rubricaulis* Rydb. are less glandular than the two preceding species; and there is little to distinguish one from the other.

Then I have listed two species which are quite unlike other

species of *Machaeranthera*. They were *Aster Pattersonii* Gray and *Aster coloradensis* Gray. *A. coloradensis* seems to be related to *A. Pattersonii* and if that is placed in *Machaeranthera* I think *A. coloradensis* should also be placed there.

Of the species with shorter green tips of the bracts, *M. spectabilis* Greene and *M. Selbyi* are very similar; the characters which distinguish them are slight. *M. viscosula* Rydb. is characterized by very narrow leaves.

II

The species under my second division are equally difficult of discrimination. *M. canescens* and *M. superba* seem distinct enough; but *M. pulverulenta*, *M. divaricata*, *M. subalpina*, *M. ramosa*, and *M. glabella* are more difficult of separation. That they are related to *M. canescens* seems evident, and that they are quite closely related to each other also seems evident. Whether there are characters by which they may be separated into distinct species is rather doubtful. In the Fl. of N. Am. by Torrey and Gray the genus name for these plants is *Dieteria*, and under *Dieteria divaricata* it is observed that "these species are so nearly related that they may hereafter be found to pass into each other."

Windsor, Col.

## THE FRANKENIACEAE AS A LINK IN THE CLASSIFICATION OF DICOTYLEDONS

Alfred Gundersen

An interesting difference between the system of Bentham and Hooker and that of Engler appears in the position of the Pink Family, the Caryophyllaceae. In the former system this family is classified with Frankeniaceae and Tamaricaceae, in the latter under Centrospermae with Chenopodiaceae, Aizoaceae and others. The many detailed characters in common between the families Caryophyllaceae and Frankeniaceae on the one hand, and between the Caryophyllaceae and Chenopodiaceae, etc. on the other, suggest that both the above interpretations may be correct. But such a double connection would require a re-